

sampling sufficient to drain the lines of effluent between cycles and to assure that the intake lines and supply lines are free of effluent before actual sampling for the next cycle commences. Similarly, the timing for operation of the valve 60 to discharge the sample to the holding vessel need only be effected prior to the initiation of the subsequent cycle. However, inasmuch as the holding vessel is maintained under controlled temperature conditions, it is preferable to discharge the effluent sample therein as soon as possible after the pH readings have been taken and the supply line purged. Further, it will be apparent that other valve types may be provided to effect the aforementioned flow control conditions. In this connection, plug valves and ball valves also can be used to selectively divert the flow in the above described manner.

It should also be apparent that the sampler may be provided with other data specific probes for measuring, in addition to pH, other parameters of the collecting vessel effluent. Regardless of the specific instrumentation employed, the fluid flow sampler is effective for automatically collecting on a periodic basis fluid samples from a remote location, providing desired data contemporaneously with the sampling and safely maintaining the integrity of the composite sample until completion of the sampling routine.

We claim:

1. A portable effluent sampler for periodically withdrawing and collecting representative effluent flowing through a waste water stream, comprising:

a holding vessel including an upwardly opening holding chamber having a lower drainage opening;

a manually operated valve connected to said drainage opening for blocking fluid flow therethrough in a first position and permitting gravity drainage of the contents in said holding chamber in a second position;

a collecting vessel including an upwardly opening collecting chamber having a downwardly opening outlet;

a liquid level sensing means projecting into said collecting chamber;

a drainage conduit having an upper end connected to said outlet of the collecting vessel and a lower end registering with said holding chamber;

an actuator controlled first valve fluidly connected in said drainage conduit and movable between a closed position blocking fluid flow through said drainage conduit and an open position permitting fluid flow through said drainage conduit and gravity drainage of the contents of said collecting chamber into said holding chamber;

an electric powered pump having an inlet and an outlet;

an electrical switch operatively connected to said pump;

an inlet line having a first end connected to said inlet of said pump and a second end adapted to be positioned in said waste water stream;

an outlet line communicating said pump outlet and the upper end of said collecting chamber;

a drainage conduit communicating to said waste water stream;

an actuator controlled second valve in said outlet line said second valve having a first position permitting flow of fluid from said pump through said outlet line for delivery into the collecting vessel and a second position blocking fluid flow into said col-

lecting vessel and permitting fluid flow from said outlet line into said drainage conduit;

an actuator controlled third valve in said inlet line said third valve having an inlet port adapted to be connected to a source of pressurized air, said third valve having a closed position blocking flow of pressurized air through said inlet line and an open position permitting the flow of pressurized air through said inlet line; and,

a control means operatively connected to said liquid level sensing means and adapted to open and close said switch and to actuate and deactuate said first, second and third valves in a sequential manner, thereby: (a) energizing said pump while maintaining said third valve in the closed position and said second valve in said second position whereby liquid is withdrawn from the waste water stream and discharged through said outlet line and said drainage conduit for a predetermined period of time until a representative waste water sample is presented to said pump, then (b) switching said second valve to said first position whereby said pump is effective to deliver waste water through said outlet line and past said second valve for delivery into said collecting chamber, then (c) sensing when the level of fluid in said collecting chamber reaches a predetermined amount, then (d) closing said switch to deenergize said pump, then (e) opening said third valve to deliver pressurized air through said inlet line to purge said inlet line after said collecting chamber reaches said predetermined amount and until said pump is reenergized, then (f) opening said first valve after the fluid in said collecting chamber reaches said predetermined level in a predetermined time to permit drainage of the contents of said collecting chamber into said holding chamber, then (g) closing said first valve and then, (h) commencing repetition of the sampling cycle a predetermined time after the initiation of the previous sampling cycle.

2. The effluent sampler as recited in claim 1 including an electric motor supported by said holding vessel and having an output shaft driving a mixer blade operable by said control means during said sampling cycle for mixing the contents in said holding chamber.

3. The effluent sampler as recited in claim 2 wherein said holding vessel includes a hinged lid on which said drainage conduit and said collecting vessel are supported, said lid having a hinged section permitting access to said holding chamber.

4. The effluent sampler as recited in claim 2 wherein said holding chamber includes a coolant reservoir adapted to be connected to a source of liquid coolant for cooling the contents in said holding chamber.

5. The effluent sampler as recited in claim 4 wherein said coolant reservoir is effective for maintaining said contents at a temperature of 4° C.

6. The effluent sampler as recited in claim 1 including a probe member carried by said collecting vessel and projecting into said collecting chamber, said probe member being effective for measuring a parameter of the contents in said collecting chamber after said predetermined amount of waste water has been delivered thereto.

7. The effluent sampler as recited in claim 6 wherein said probe member is a temperature compensated pH probe for measuring the pH of said contents at a predetermined time after deenergization of said pump.